

WE CLAIM AS OUR INVENTION:

1. A microwave ceramic filter, comprising:
 - a ceramic base body;
 - at least one metallized bore in the base body;
 - a closed exterior metallization arranged on exterior surfaces of the base body with the exception of one end face;
 - at least one metallic structure on the one end face comprising at least one coupling structure; and
 - the at least one metallic structure being formed as at least one metallized recess in the one end face.
2. A filter according to claim 1 wherein the at least one metallic structure is connected to a contact surface on an exterior face representing a bottom side, said contact surface being electrically insulated with respect to the exterior metallization.
3. A filter according to claim 1 wherein at least two of the metallized bores for two sub-filters of a duplexer are provided and at least three metallic structures are formed as coupling structures.
4. A filter according to claim 3 wherein at least one further metallic structure is provided on the one end face for decoupling the two sub-filters of the duplexer.

5. A filter according to claim 1 wherein the at least one recess has a depth between 1 and 20 % of an overall height of the base body.

6. A filter according to claim 1 wherein the at least one recess has a depth of 0.1 up to 1 mm.

7. A filter according to claim 1 wherein a capacitive coupling with respect to the metallized bore is adjusted via a depth of the at least one metallic structure.

8. A filter according to claim 4 wherein the at least one further metallic structure formed for the decoupling is electrically connected to at least one metallized bore.

9. A method for producing a microwave ceramic filter having at least one metallic structure on an end face, comprising the steps of:

producing a ceramic green body with at least one through bore and at least one recess on an end face of the green body;

sintering the green body to form a ceramic base body;

metallizing the base body, wherein an exterior metallization is generated on surfaces including an interior surface of the recess and an interior surface of the bore; and

mechanically removing the exterior metallization on said end face such that the metallization in the recess remains to create said structure on the end face.

10. A method according to claim 9 wherein the ceramic green body is formed by pressing a ceramic powder which is treated with a binder to shape it with the assistance of a press tool, wherein a generation of the bore and the recess occurs at a same time as the shaping of the green body as a result of a corresponding forming of the press tool.

11. A method according to claims 9 wherein the metallization at the end face of the base body is roughened.

12. A method according to claims 9 wherein surface areas of the exterior metallization are provided as at least one electrical contact surface electrically separated from the exterior surface provided as a bottom side, wherein the contact surface is connected to the metallic structure provided as a coupling structure on the end face in an electrically conducting manner.

13. A microwave ceramic filter, comprising:

- a ceramic base body;
- a plurality of metallized bores in an end face of the base body;
- an exterior metallization arranged on exterior surfaces of the base body but not on the one end face;

a plurality of metallic structures on the one end face comprising coupling structures; and

the metallic structure being formed as metallized recesses of the one end face.

14. A method for producing a microwave ceramic filter having metallic structures on an end face, comprising the steps of:

producing a ceramic body by pressing a ceramic powder with a binder and providing a through bore and a plurality of recesses on an end face of the green body;

sintering the green body to form a ceramic base body;

metallizing the base body, wherein an exterior metallization is generated on surfaces including interior surfaces of the recesses and interior surfaces of the bores; and

removing the exterior metallization on said end face such that the metallization in the recesses remain to create said metallic structures.